IN THE CLAIMS

Please amend the claims as follows:

Claims 1-33 (Cancelled).

Claim 34 (New): An optical apparatus, comprising:

a plurality of upstream input ports;

a plurality of upstream output ports;

a plurality of bidirectional downstream input/output ports;

a plurality of hub conversion modules, wherein each hub conversion module is connected to one of said plurality of upstream input ports and to a corresponding one of said plurality of bidirectional downstream input/output ports, each hub conversion module comprising:

a receiver configured to convert a carrier signal modulated on an optical input signal to an electrical signal,

a frequency converter connected to an output of said receiver configured to convert said frequency of said electrical signal, and

a transmitter connected to an output of said frequency converter and configured to convert said electrical signal to a carrier signal modulated on an optical output signal; and

a controller connected to each of said hub conversion modules and configured to control frequency conversion of said electrical signal.

Claim 35 (New): The optical apparatus of Claim 34, wherein said plurality of hub conversion modules comprises:

a first hub conversion module having a corresponding first frequency converter; and

a second hub conversion module having a corresponding second frequency converter,

wherein said first and second frequency converters are configured to convert a frequency of a corresponding carrier signal modulated on an optical input signal to a first and second frequency, respectively, said first converted frequency being different from said second converted frequency.

Claim 36 (New): The optical apparatus of Claim 34, further comprising:

an analog upstream output port; and

an analog downstream input port.

Claim 37 (New): The optical apparatus of Claim 36, wherein said analog upstream output port and said analog downstream input port are configured to carry analog optical signals.

Claim 38 (New): The optical apparatus of Claim 34, wherein said plurality of upstream input ports, said plurality of upstream output ports and said plurality of bidirectional downstream input/output ports are configured to carry digital optical signals.

Claim 39 (New): A method for optical signal conversion, comprising:

receiving an optical input signal from an upstream input port;

converting a carrier signal modulated on said optical input signal to an electrical signal using a receiver;

frequency converting said electrical signal converted by said receiver using a frequency converter where said frequency converting is controlled by a controller;

converting said frequency converted electrical signal to a carrier signal modulated on an optical output signal using a transmitter; and

transmitting said optical output signal to a bidirectional downstream input/output port.

Claim 40 (New): The method of Claim 39, wherein said optical input signal and said optical output signal contain the same information content.

Claim 41 (New): The method of Claim 39, wherein said frequency converting uses a first frequency or a second frequency, where said first frequency and said second frequency are different.